

Commonwealth of Kentucky
Division for Air Quality
PERMIT STATEMENT OF BASIS

DRAFT

Conditional Major, Operating
Permit: F-07-015
Duro Designer Company, Inc.
Richwood, KY 41094

March 20, 2007

Mark Labhart, Reviewer

SOURCE ID:	21-015-00086
SOURCE A.I. #:	175
ACTIVITY ID:	APE20040001

SOURCE DESCRIPTION:

The source manufactures and prints bags from paper and plastic for a variety of customers including retailers, restaurants, and consumers. Currently there are (35) flexographic presses and (2) rotogravure presses utilizing low VOC and low HAP content inks. Potential HAP emissions are less than major source thresholds, but the source wide PTE for VOC is greater than the major source threshold. Actual emissions have historically been lower than the source-wide PTE, therefore Duro has requested a Conditional Major limitation on VOC. There are (2) parts cleaners subject to 401 KAR 59:185, but these are classified as insignificant activities. Other insignificant activities include (1) n.g. fired facility boiler subject to 401 KAR 59:015, (4) Air Make-Up heaters, flexographic plate making equipment, and plastic extrusion equipment.

COMMENTS:

Duro has requested a Conditional Major permit since anticipated actual emissions are below major source thresholds due to the exclusive use of water-based inks.

1. Prior to August 30, 2002, Boone County was designated moderate, nonattainment for ozone, (1-hour), hence Regulation 401 KAR 59:212, New graphic arts facilities using rotogravure and flexography, applied to the facilities in existence at this time. From August 30, 2002 until April 15, 2004 Boone County was in attainment for ozone. On April 15, 2004, Boone County was designated basic nonattainment for ozone, (8-hour). Since the current status of Boone County is nonattainment, and since all presses have been constructed after February 4, 1981, 401 KAR 59:212 is applicable to all presses at this facility.
 - 1.1. The overall level of control required by Regulation 401 KAR 59:212 Section 3, and the exemptions of Section 6 are from the EPA's, OAQPS Guideline Series, (CTG series), Volume VIII: Graphic Arts –Rotogravure and Flexography, published in December 1978, EPA-450/2-78-033, with exception of exemption (4) which was added 6-24-1992.

- 1.2. Duro Designer Co. has a large “margin of compliance” with 59:212 due to technical advances in the printing industry since 1978.

“Margin of compliance” refers to the difference between a facility’s emissions limit and actual emissions. (TECHNICAL SUPPORT DOCUMENT (TSD) FOR TITLE V PERMITTING OF PRINTING FACILITIES, January 2005).

Duro has chosen to comply with exemption (1) of 59:212, Section 6, which requires that the VOC portion is 25% or less of the total volatile content of the ink “as applied”. Inks currently being used at Duro have VOC content on the order of 5% or less.

- 1.3. Per 59:212, Section 1:

“Affected facility” means a printing line

“Printing line” means a series of equipment including

Mixing operations

Process storage

Applicators

Drying operations

Clean up operations

Leaks, spills and disposal of VOCs

Processing and handling of recovered VOCs

- 1.4. Per 59:212, Section 6, Exemption (1), the source must demonstrate compliance for each ink “as applied” at the applicator. From the definitions above it is clear that ink storage and blending operations are a part of the affected facility for this source. Clearly, if all inks “as supplied” are compliant with exemption 1 of 59:212, and all inks are used “as supplied”, then it is necessary only to monitor and record the amount of inks and VOC content of each to demonstrate compliance on a sourcewide basis, that the exemption has been met “in all printing units”, (i.e. applicators). Likewise, if all inks “as supplied” are compliant with exemption 1 of 59:212, and only water or exempt solvents are added at the presses, then again it is possible to demonstrate compliance on a sourcewide basis by monitoring and recording the amount of ink used, the VOC content “as supplied”, and the type and amounts of exempt materials added to the “as supplied” inks.

- 1.5. Clean up solvent usage is included in 59:212 and must be considered when the affected facility is subject to the overall control requirements of Section 3. However, once a printing line is exempt from Section 3 by meeting a requirement of Section 6, then recordkeeping and monitoring requirements for the clean up solvents are not clear from the regulation. Given an overall reduction in VOC content of the water-based inks, the Division expects a similar VOC reduction in the clean up solvents. For the small amounts of VOC / HAP containing materials that are used for press clean up, these will be monitored for compliance with the sourcewide emission limitations.

- 1.5.1. The EPA’s recommended approach to reduce VOC emissions from cleaning materials used in flexible package printing includes use of work practices, (Control Techniques Guidelines for Flexible Package Printing, EPA 453/R-06-003, September 2006). Work practices such as keeping solvent containers closed were added to Section E of the permit, for the purpose of;

1.5.1.1. Addressing the vagueness of 59:212 with regards cleaning solvents, and

1.5.1.2. Such work practices are consistent with 401 KAR 50:055.

2. Regulation 40 CFR Part 63, Subpart KK—National Emission Standards for the Printing and Publishing Industry is not applicable. The source wide PTE for all single HAPs is below 10 tpy, and the source wide PTE for all combined HAPs is below 25 tpy. Therefore this is a true minor source for HAP and the regulation does not apply.
3. Potential emissions for the printing lines were estimated by material balance. With the large number of inks that Duro can use on different presses with different ink usage rates, some simplifying assumptions were made. A table was developed for all inks based on actual consumption, and the VOC content was determined as a simple average. The average VOC content of the inks determined in this manner is conservative as no weighting factors were used to compensate the fact that different colors and types of ink are used in differing amounts. The actual average reported VOC contents of the inks has been approximately 3.0% or less for past couple of years. The average VOC content calculated as described was greater than 7%, (7% used in calculations. Despite the conservative estimate of PTE, synthetic minor limits are not required so there is no effect on the permit status for the source.
4. Potential emissions from the adhesive usage were determined simply based on worst case VOC content and worst case HAP content of all adhesives currently in use.
5. Emissions from natural gas fired devices are based on AP-42 factors.
6. Emissions from the parts cleaners were determined by material balance.

EMISSION AND OPERATING CAPS DESCRIPTION:

The permittee shall limit VOC emissions to 60 tpy or less for each consecutive 12-month period.

OPERATIONAL FLEXIBILITY:

Duro Standard is not restricted as to hours of operation or quantity of product produced while remaining within the caps above.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.